

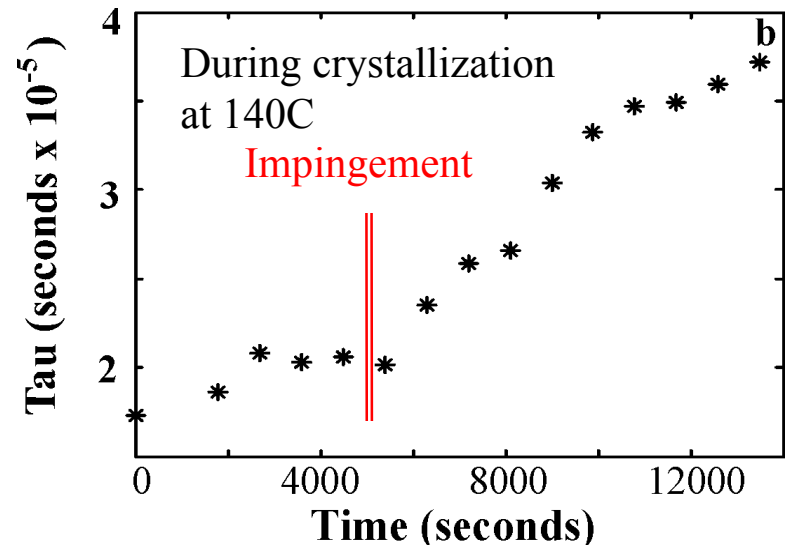
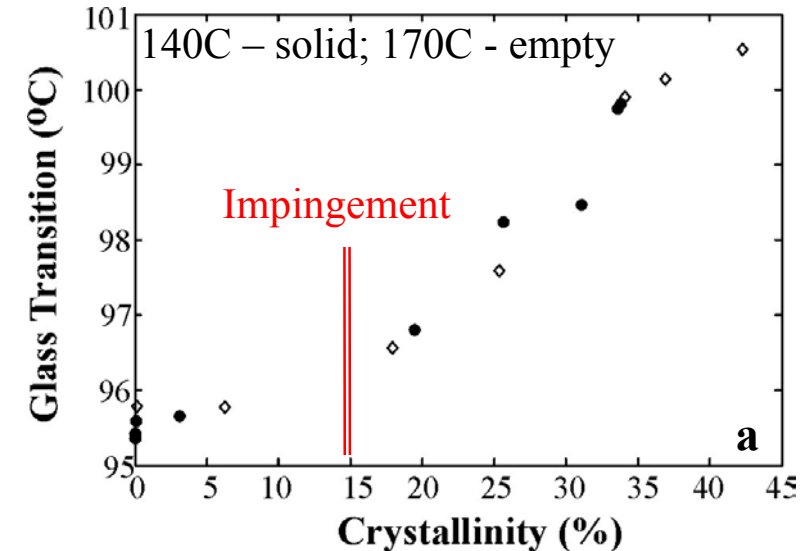
Semicrystalline Polymers under Confinement as Thin Films

Peggy Cebe, Tufts University, DMR-0100646

Crystalline polymers are used in advanced applications including automotive, aerospace and electronic industries. Crystals behave as rigid inclusions and make polymers more resistant to heat and solvents, and better able to withstand mechanical deformations.

When there are few crystals (in (a), at low crystallinity, or (b) low crystal growth time) properties such as the glass temperature and relaxation time are low. Once the adjacent crystals completely fill the volume and they impinge on their neighbors, the properties increase dramatically. Results are shown for isotactic polystyrene polymer, with crystals grown at 140 C or 170 C.

Hui Xu, B. Seyhan Ince, Peggy Cebe. *J. Polymer Science, Polymer Physics Ed.*, 41(23), 3026-3036, 2003.



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Education and Outreach to the Deaf and Hard of Hearing



At Gallaudet University for the deaf, Prof. Cebe presents a popular lecture “What Superman Sees with X-ray Vision.” a.) Prof. Cebe, left with two interpreters and student. b.) Prof. Cebe answers a student (right) through interpreter Sherry Hicks. c.) Pictured from left are: Dr. Freddy Khoury of the NSF, Prof. Cebe, her sister Dr. Juanita Cebe, Profs. Walter Trafton and Michael Moore of the Dept. of Chemistry and Physics at Gallaudet, and interpreters Jesse Thomas, Sherry Hicks and Tom Bull.



d.) At Tufts University, Gallaudet student, Jennifer Berrigan (left), performed a summer internship. She is shown working in the fume hood with Tufts student, Laurel Powers.